THE VETERINARY RECORD

A Weekly Journal for the Profession.

Edited by WILLIAM HUNTING, F.R.C.V.S.

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SHEEP SCAB.

The article which appears in another column is from the pen of a thoroughly practical expert, and it agrees in most of its criticism with the opinions expressed by nearly all the men who really know anything of the disease.

Sheep scab is constantly prevalent in only a few districts, but is regularly spread from these to other parts by the movement of infected animals. What then is chiefly urgent is to insist upon all sheep in "scabby" districts being cured before movement into other districts is permitted.

It was once argued that regulations for the suppression of rabies must be applied simultaneously to the whole kingdom. We have found by experience that such a measure was unnecessary, and that restrictions placed upon a wide area including the infected place were sufficient. So with the suppression of scab it is not necessary to worry the owners of healthy sheep if we adopt measures insuring the detection and treatment of the diseased flocks.

The fact is sheep scab has been allowed to spread because local authorities have not done their duty and because the Central Authority—the Board of Agriculture—has utterly and entirely neglected its duty of supervising the local authorities.

The report of the Departmental Committee has noted this negligence and suggested that the Central Authority should make inquiry into every reported outbreak of scab and its actual source of infection. This is just the work a local authority cannot do and the Board will not do. When the Board of Agriculture takes a disease of animals into its own hands one of the first actions is to note any outbreak and endeavour to trace back to its source.

The Board poses as the Central and Controlling Authority but gives no assistance to the local authorities, and when they fail to attain success the Board's officials compare the failure of local attempts with the success of their own endeavours.

In the last Annual Report of the Board of Agriculture the "Assistant Secretary" states "that direct supervision on the part of the Central Authority is a necessary supplement to the action of the local authorities." Is there a case on record of the Board supplementing local action in the case of sheep scab?

The present arrangements of the Board seem to us to render intelligent supplementary action impossible. Such action requires the immediate attention of the Central veterinary experts to the reports made by veterinary inspectors all over the country. These reports arrive every week, and require a trained mind to understand them and to read into the columns of figures the prevalence and spread of disease. These weekly reports contain information otherwise unattainable, and information that can only be properly understood by persons trained to study the facts of epizootic disease.

Week after week these reports arrive at the Board of Agriculture and are used only to compile tables for use at the end of a year. They are sent direct to the "Statistical Department" and received by clerks whose only knowledge is the arrangement of the figures in the various columns. The experts—the veterinary officers of the Board—have their rooms in a building half a mile away. The valuable and all-important returns of disease go to the Statistical Department, and if they ever reach the Veterinary Department it is some days after the time at which their contents might enable the Board to "supplement the action of the local authorities." The fact is the laymen who control the Board are ignorant of the value of these weekly returns, and instead of using them to supplement the action of local authorities misuse them as mere statistical matter.

Great changes in methods and in men will be necessary at the Board of Agriculture before it is possible for that department to supplement the action of local authorities. Without this assistance the limited powers of local authorities have little chance of controlling the diseases now entrusted to their care. The local authorities are expected by the Board to control disease without the necessary power and without the assistance from the Central Authority which is essential to success. Like the Israelites they are ordered to make bricks without straw and are abused when they fail.

Without the active supplementary help of the Board no contagious disease can be systematically controlled by local authorities. The Board know this, and refuse the help, and then calmly find fault with the action of the local people—they gladly appropriate the credit of all successes and cautiously avoid the responsibility of supplementary action.

The President of the Board of Agriculture has recently been in Scotland and given his opinions upon sheep-scab and its control. There are two paragraphs in his speech worth noting:—

"We have had a good deal of experience of the administration of the Orders of the Board, and we know that it is not quite so easy a matter to carry these things into effect as some people might imagine. For example, sheep are spread over wide and very thinly populated areas. Naturally in a thinly populated area there is not a very numerous police force. There is no necessity for it. And yet it is on the police force, under the direction of the local authority, that we have to rely for the carrying into effect of any orders that may be made by the Board."

On this we make two comments (*a*) that some of the Orders issued are so stupid that it is naturally impossible to carry them into effect.

(*b*) That reliance upon policemen to carry out orders dealing with contagious diseases is the cause of endless worry and of pitiful failure to achieve the end desired. The ridiculousness of the method is apparent if we only think of similar trust being placed in the police for the control of infectious disease in man.

Lord Onslow also said—

"But I think much may be done in ascertaining and defining the premises where sheep-scab exists, keeping a careful watch upon them, and in the detention of any sheep which may have been in contact with other sheep that may have the contagion of scab upon them."

With this everyone will agree—but is it to be done by policemen? and is there to be any supplementary assistance from the Board of Agriculture? We venture to think he would find one veterinary surgeon of more assistance than a hundred policemen.

There is just one other remark of the President of the Board of Agriculture we cannot help quoting as displaying either simple faith or gross ignorance.

"I think we are certainly a step further forward, in that we have a distinct pronouncement on the part of the Committee that one dipping of a sheep is sufficient to cure scab."

This opinion is founded upon the fact that Professor Winter, with one dressing, cured eight sheep in an experimental trial. The experience of all the rest of the world is that two dressings or dippings are necessary to make sure of a cure. It is doubtless true that one dipping has cured—it is equally true that one dipping, and even more, has frequently failed to cure. It seems remarkable that the President should have accepted that pronouncement of the Committee which is most opposed to practical experience and which, if not true, would render any Orders of the Board for the suppression of scab useless.

DEPARTMENTAL COMMITTEE'S REPORT ON DIPPING SHEEP.

No practical results appear to have been arrived at by the deliberations of the Sheep Dipping Committee. What the Committee have reported about dips was already well known to all practical sheep farmers at home and abroad, viz., that arsenical dips are very poisonous and frequently kill sheep, especially those in low condition; that many carbolic or tar acid dips are very crude in their composition and frequently permanently stain and damage the wool, as well as cause considerable irritation to the skin; that lime and sulphur, and tobacco and sulphur dips are the most effective for sheep scab. But that unless great care is exercised in the preparation of the first, it cannot with impunity be used for dipping sheep with full fleeces, and that the price of tobacco prevents its being more generally used as a basis in sheep dips in this country.

The Committee were not sufficiently brave to recommend any particular dips, but desired the Board to schedule dips which their chemists found efficient, forgetting that the question of safety is not less important. A dip may contain the necessary compounds to kill all skin parasites and not damage the wool, yet kill the sheep. The Committee should have stated which, in their opinion, were the most efficient dips on the market, instead of leaving this all important matter to be decided by a non-practical body like the Board of Agriculture.

The experiments of their Secretary, Prof. Winter, on sheep dipping as a cure for scab are of still less value. My remarks apply especially to the third series of experiments with four particular dips. With these Professor Winter dips eight diseased sheep and arrives at the startling conclusion that once dipping in an efficient dip is sufficient to cure scab.

What conclusions of any value could be arrived at by such limited experiments? Yet the committee adopt the findings of their secretary against the evidence of their witnesses, as well as the experience of flock owners from all parts of the world—that it is absolutely necessary to dip at least twice, and sometimes three or four times, before the disease is eradicated from a flock. Another objection to Professor Winter's experiments is that his methods of dipping would not be those of a flock owner when dealing with a diseased flock on the homestead. In the second series of experiments in which sheep were dipped twice at intervals, he (Prof. Winter) assumes that the disease was cured by the first dipping, as ten days after that dipping no living acari were found on the skin!!!

On the strength of these feeble dipping experiments, and against evidence given by witnesses and obtained from other sources, the committee without hesitation recommend that all sheep in Great Britain and Ireland should be compulsorily dipped annually in a dip recognised as efficient by the Board!

The working of this drastic measure is to be left to the flock owner and the village constable. The Committee could advise no other scheme for the eradication of sheep scab in this country. The policy successfully adopted in the Australian Colonies, where a sheep owner was held responsible for having scab in his flock and severely fined if he did not get rid of it in a reasonable length of time, was considered by the Committee as too drastic a measure for this country. Yet they recommend the annual compulsory dipping of nearly 30,000,000 sheep!!

To be effective, compulsory dipping must be simultaneous in a county. This fact the Committee appears to have had in view when making their recommendation:—"That the period prescribed for dipping for each county shall fall between two dates within six months after shearing." But what appears to have escaped their attention entirely is that between the periods prescribed for dipping all movement of sheep in the county must of necessity cease. This would lead to complete paralysis of the sheep trade for the time being.

Yet another point which seems to have been overlooked by the Committee is that methods of sheep farming differ widely in the same county. A date fixed by the local authority might be convenient for dealing with a grazing flock, but highly inconvenient as well as costly for a breeding farm. Moreover, unless some kind of legal supervision were exercised over compulsory dipping the whole procedure would be abortive.

The task of supervising the compulsory dipping annually of 30,000,000 sheep is not to be thought of. In fact the more one considers this particular recommendation of the Committee the more ridiculous and impracticable does it appear.

Mention is made by the Committee of the dissatisfaction which prevails in some counties caused by the restrictions as to movement of new arrivals of sheep until they have been dipped. This dissatisfaction is small compared to that which will be aroused if their recommendations are put in force.

The Committee recognise that the powers conferred on local authorities by the Sheep Scab Order of 1898 can be worked effectually, but they add—"Unfortunately some of the local authorities responsible for the administration of this Order take no interest in the eradication of sheep scab." Is it to be supposed that the same local authorities would take any more interest in the working of an Order for the compulsory dipping of sheep?

Because one farmer in 1000 has sheep scab, must the other 999 be put to the inconvenience of having a date fixed by the local authority for the dipping of their flocks—a process which the majority of them in their own interest would carry out at a season best suited to the requirements of their particular line of sheep farming?

The centres of sheep scab in Great Britain are the hill farms. Some of the witnesses before the Committee bore out this statement. On many of these farms scab is never reported and only detected after the animals are brought into enclosed districts. The only important and practical suggestions which the Committee made as likely to be of use in eradicating scab from this country are: 1. "That the Central Authority should see that the local authorities carry out properly the provisions of the Sheep Scab Order of 1898; 2. The same authority should make enquiry into every reported outbreak of scab, as to its actual source of infection. At present no local authority can search beyond its own jurisdiction."

By adopting these recommendation the source of infection would most probably be traced to a district or districts. The Board could then consider whether it was necessary that the local authority of such districts should put in force some regulation for the compulsory dipping of all sheep in those areas in which scab was suspected to exist. *This* compulsory dipping to be carried out under the supervision of a veterinary inspector and not a police officer.

Compulsory dipping in a limited area would be found no easy task for a local authority to enforce, and would prove perfunctory unless carried out in charge of a responsible official.

Much of the dipping done by flock owners with the view of preventing scab is worth very little. If the sheep submitted to dipping come from a flock in which scab was known to exist, it is a common experience to find the animals exhibiting the disease in the ordinary course of time unless the precautionary dipping had been done under the supervision of some responsible person.

R. J. H.

Is the Diploma of the R.C.V.S. of Sufficient Guarantee that the Veterinary Surgeon is Proficient in Veterinary Hygiene?

By Henry Gray, M.R.C.V.S.

It has been, from time to time, put forth that the veterinary diploma is a sufficient guarantee that the holder of it is capable of discharging any and every function within the domain of veterinary medicine and hygiene. On the other hand many capable authorities have held the opposite view and, suited their action to their view, have instituted, to supplement the shortcomings of the teaching and examining of the schools respectively, a post-graduate course of veterinary hygiene and meat inspection.

We have always prided ourselves on our one portal system, and now submit to the extra teaching and extra examining of our graduates by Institutions, like the University of Manchester, not under the control of the veterinary profession.

We must not blame this and other Universities and the Sanitary Institute in attempting to fill up, as they think a lacuna * in our teaching and examining. On the contrary, they should be commended as they, like mice, only go where they believe there is food or material for their energy to be expended upon.

We have to blame ourselves in consequence of our ultra-conservatism and over-confidence. The Royal College of Veterinary Surgeons, composed of cliques, probably some of which think of their own power for their own ends, have now landed the profession in a nice plight from which it will be difficult to extricate itself. It has allowed other bodies to do what it has failed or not attempted to do. It has now opponents, and the outcome of it is competition in teaching and examining on what has always been considered a subsidiary or secondary matter, namely, veterinary hygiene, which is, in its broadest sense, the subject of prime importance to the veterinary profession in its relation with the public or State.

* Professor O. Williams made a proposition on the teaching and examining graduates, post-graduately on Veterinary Hygiene, to the R.C.V.S. two or three years ago, but it fell to the ground. Liverpool University initiated a course on the subject; it was closely followed by the Royal Veterinary College, London, and now by the Manchester University. The profession must feel the want, else how can this course be carried out. No pupils, no class. No veterinary surgeons, no post-graduate course. The Sanitary Institute was the first to open classes on meat inspection. If meat inspection is taught efficiently to students why do they attend these classes after graduation?

We have been told in public that the reason the Council of the R.C.V.S. has not moved in the matter of the veterinary profession in its relation with the Board of Agriculture is because the majority of the Councillors are in the pay or act under the Board of Agriculture, and are in consequence afraid of it. If this be so, then what has been their action in regard to the teaching and examining in veterinary hygiene postgraduately? Is it in consequence of the power or favour of the schools? I have always urged that the schools have too much power in the Council Chamber of the R.C.V.S. Nine-tenths of the profession are composed of practitioners and these nine-tenths require nine tenths representation on the Council. The schools merely exist for the profession and not the profession for the schools. Until our mode of representation is reconstituted there is no hope of real progress. One or two strong men in a body soon overawe the majority, like one or two strong animals in a herd or flock, the remainder tamely submit and follow their leader blindly.

Mr. Wm. Woods, Member of the Court of Examiners of the R.C.V.S. and lecturer on Veterinary Hygiene in the Victoria University of Manchester speaks openly and apparently without fear. In the introductory lecture on veterinary hygiene delivered at the above mentioned University on Oct. 18th last, he said that although veterinary hygiene was taught in veterinary schools and examined upon by the R.C.V.S. it was crippled because it took place before any knowledge of contagious diseases was obtained. Coming from such an authority, one of us, surely the Body Corporate ought to enquire into the matter and, if possible, remove the alleged existing anomaly.

If a post-graduate course on veterinary hygiene is necessary why does not the R.C.V.S. remove the ground for it by instituting another year's course of instruction on veterinary hygiene, so that the bearer of the diploma goes out into the world fully equipped to fulfil any office falling upon him?

By doing so the Council would be doing its duty to the profession and the public and would remove an occasion for a post-graduate course in Universities, etc. There would then be no multiplication of diplomas. It should have no opposing cliques between schools. That is not its function. Its privilege is to see that veterinary surgeons are manufactured for distribution over the British Empire for the benefit of the State, directly and indirectly.

Oppression begets counter-oppression, opposition counter-opposition. The office of the R.C.V.S. should be neither of these, but to hold the balance between rival factions outside the Council Chamber for the benefit of the whole profession.

ARMY VETERINARY DEPARTMENT.

Extract from *London Gazette*,

War Office, Pall Mall, Nov. 1.

Memorandum.—Lieut.-Colonel J. W. A. Morgan is granted the temporary rank of Colonel whilst employed as Inspector-General, Indian Civil Veterinary Department.

ABSTRACTS FROM FOREIGN JOURNALS.

On the Question of the Infectivity of the Milk of Tuberculous Cows. — By Lydia Rabinowitsch.

Since 1899 Rabinowitsch has come to the conclusion from investigations conducted that "not only in commencing tuberculosis, but also in the latent form only discovered by tuberculin, the milk can contain tubercle bacilli,' and asserts that the most certain way of obtaining milk free from tubercle bacilli is by clinical examination and bacteriological control of milch cows, and the tuberculin test.

Ostertag and Müller contest this on the ground of experiments made by them. They fed calves and swine for weeks and months with the milk of fully reacting cows without giving infection in any case. They thus come to the conclusion that the milk of such cows does not contain tubercle bacilli.

Behring says: "Childrens milk is the chief source from which consumption arises," and so present is the danger of tuberculous milk for infants and children that Rabinowitsch makes some critical observations on the most recent experimental work to hand.

The works of Gehrmann and Evans stand out as especially interesting. With the assistance of veterinary surgeons they conducted experiments on 41 cows which had all reacted to tuberculin and were only slaughtered after full reaction. Shortly before slaughter the milk was tested. Forty of these animals showed tuberculous lesions on post-mortem; the udders, however, were healthy.

"In the forty-first cow there was not a trace of any tuberculous change in any of the organs, although in the milk of these cows as well by animal experiments and microscopically all four teats were shown to give forth tubercle bacilli,

In one of the cows whose milk was found to be infectious, microscopically and by inoculation, a small mediastinal and mesenteric infection was noticed, and in another a caseous mass in a mediastinal gland. By exceedingly able microscopists the milk from all four teats was examined, and in 15 cows (36·6 per cent.) tubercle bacilli were found. By animal experiments 10 cows (24·4 per cent.) were found affected. In nine of these latter tubercle bacilli were found in the milk.

Ravenel made like trials on five cows reacting to the tuberculin test. On post-mortem tuberculosis was not found in any of these cows, but the milk, however, contained tubercle bacilli.

Of the greatest interest are the experiments conducted in America by doctors and veterinary surgeons. The milk of 56 cows reacting to tuberculin was submitted to examination. The tuberculin inoculation was undertaken two months before the beginning of the milk examination. Slaughter was effected several months to one year after inoculation. Only two of these animals showed clinical symptoms of tuberculous illness at the end of the examinations. On post-mortem they all, however, showed more or less generalised tuberculosis; the udders, however, were free from tuberculosis.

Feeding experiments were conducted on three or four guinea-pigs to each cow, which received daily for two or three months 80-120 c.cm. of full milk. For inoculation of guinea-pigs shaken milk, cream, and the sediment from the milk mixed, and cream and sediment alone were used. Microscopic preparations amounting to from four to six were prepared from each of cream and sediment.

The results from the trials in which almost 600 guinea-pigs were used were as follows: By feeding and inoculation in five cases, microscopically as well as by feeding and inoculation in three cases, only through inoculation in three cases, through feeding in one case, and microscopically in one case were tubercle bacilli proved in the milk. In the whole of the cows, as well as in these 13, as already stated, "only two at the end of the trials showed slight clinical symptoms of tuberculosis."

The great importance of these experiments lies in the fact that between tuberculin inoculation, milk examination, and slaughter, there was invariably a space of some months. In this way it was proved that tuberculin inoculation along with clinical examination, is necessary for the early recognition of tuberculous suspected cows.

Some of the bacilli secreting cows showed a quick progress of the tuberculosis, so that a number of them showed clinical symptoms a few months later, or on post-mortem advanced tuberculous processes.

"The earlier such cows can be declared as suspicious through the falling off of the tuberculin reaction the sooner one can prevent the activity for infection of the milk of these animals. By pasteurisation and sterilization it can be made a harmless means of nourishment."

From the above proof is furnished that the milk of slightly reacting cows can cause feeding tuberculosis (in nine of the thirteen cases).

Comparing the daily administered milk (80 to 120 c.cm) with which the guinea-pigs (from 300—400) were fed with that given to our sucklings, the danger of raw milk is at once evident.

Rabinowitsch notes that the secretion of tubercle bacilli is not regular, as by inoculation and microscopic experiments the milk of a cow with a tuberculous udder may give a positive result to-day and a negative result to-morrow. Also Rabinowitsch corroborates Mohler who says that the sediment of shaken milk contains more tubercle bacilli than the cream.

A greater value is placed on intra-peritoneal inoculation than on microscopic examination. That tubercle bacilli may be found in the milk of slightly reacting cows is to-day proved from bacteriological experiences.

In earlier times (Fournier and Beaufumé in the Société de Biologie) proved that tubercle bacilli were secreted by the kidneys without any specific changes in the kidneys. Flick and Walsh found in 60 cases of clinical tuberculosis tubercle bacilli 44 times in the urine and only 35 times in the sputum.

What applies to the milk of tuberculous cows applies so much the more to the milk of tuberculous mothers. In opposition to Schlossman who, finding no tubercle bacilli in the milk of four tuberculous mothers, allowed them to suckle their children, Rabinowitsch says that tuberculous mothers should not on any account suckle their children.

In order to obtain cow's milk free from tubercle bacilli for our children according to the present state of scientific knowledge, the choice and permanent control of milk cows should be brought about by clinical and bacteriological examination and the tuberculin test, and the tubercle bacilli in the collected milk of reacting cows should be rendered harmless by Pasteurisation.—Ex. *Fortschritte der Veterinär Hygiene.*

G. M.

Congenital want of a Kidney and Cryptorchidism on the Opposite Side in a Bull.

An eight year old bull was slaughtered and showed the following abnormalities of the genito-urinary system, complete absence of the left kidney and its ureter, the right kidney was normal in all respects and weighed 700 grm., the ureter was slightly dilated, but the bladder was perfectly normal. The anomaly seemed to be caused by the psoas muscle which was much enlarged on the left side. The left testicle had been atrophied by bistourhage, the right however was ectopic in the abdominal cavity. During life there was nothing to indicate the presence of these abnormalities.—*Rev. Gen. de Méd. Vét.*

Cancer of the Bladder in the Horse.

An eighteen year old horse had for some time shown pain on passing urine which contained blood and blood clots. Lehmeyer explored per rectum and felt the bladder, about the size of a baby's head, and on the neck of it a pasty fluctuating body about the size of an hen's egg. Pressure on this caused a flow of urine. The animal was killed and the bladder was found to weigh 3lbs. There was a cicatricial new growth on the right and left of the median ventral line, and the cavity of the organ was completely full of a tumour with villosities upon its free surface, and which Prof. Kitt declared to be a carcinoma. There were no other metastatic tumours in the other organs.—*Woch. f. T. u V.*

Indigestion and Vomiting.

Teppaz was called to a mare which appeared to have severe colic. She was restless and trembling, her eyes were fixed and staring, her trunk was covered with sweat, but her legs and ears were cold. The mare made violent efforts to vomit, and three times expelled a large quantity of semi-liquid greenish matter.

The symptoms pointed to it being a case of gastric indigestion caused by eating her food too rapidly, and treatment proved this to be the case. In fact the mare had been working very hard and had rapidly bolted her morning's feed.

Dietary was sufficient to effect a cure. If we must allow that vomiting in a horse must be preceded by rupture of the stomach, then this would be a case of dilatation of the œsophagus. But in

this case such did not exist, and Teppaz considers that the extreme distention of the stomach caused loss of nervous stimulus and paralysis of the muscular tons of the stomach with consequent relaxation of the cardiac opening.—*Rev. Gen. de Méd. Vét.*

[This case supports the one reported a few weeks ago by my friend W. H Williamson.—F. E. P.]

GLANDERS.

From the Report of the Chief Officer of the Public Control Department of the London County Council we extract the following interesting matter:

This disease, which is mainly confined to large towns, and is very rife in the metropolis, is dealt with under the Glanders or Farcy Order of 1894, which requires notice to be given of every case of disease and permits local authorities to order the slaughter of diseased or suspected animals, subject to the payment of compensation of not less than £2, and not exceeding one-quarter of the value of the animal slaughtered. When a horse, killed under the Order, has been found not to be affected with glanders, the full value of the horse has to be paid as compensation.

The Council's veterinary inspectors are instructed to take all the measures in their power to free their districts from glanders, to keep all suspected stables, and all stables in which disease had existed within 56 days under observation, to visit such stables fortnightly and carefully examine the horses therein and especially horses that may have been in contact with diseased horses.

When a horse, giving no outward indication of glanders, is suspected, whether because it has been working with, or standing near to glandered horses, or from any other reason, the inspector is authorised to advise the owner to cause the horse to be properly injected with mallein, and to adopt the precautions set out under the head "Injection of Mallein" on a paper issued by the Council. The employment of mallein injections for purposes of diagnosis of glanders rests entirely upon the advice and responsibility of the veterinary inspector.

Out of the 2,055 cases of glanders reported in London during the year, 392, or 19 per cent., were diagnosed solely by the mallein test, and in these cases, quarter value has been awarded by the Council as compensation. Mallein was also employed to aid diagnosis in 471 cases where the outward indications of disease were slight, and not sufficiently characteristic to enable the inspectors to certify the suspected animals as being glandered, but the minimum rate of compensation only has been paid in these cases.

The returns for the year show that there has again been an increase in the number of horses slaughtered under the glanders order, not only in the county of London but in the country at large. The total number of reported cases shows an increases of 483 or 30 per cent. on the figures for the preceding year. This increase is very unsatisfactory and indicates the ineffectiveness of the present law in enabling local authorities to check the progress of the disease.

It will be seen that in 1892 the reported cases of glande s in London reached 2,526, but following the operation of the Glanders Order of 1892 and 1894, the numbers for some years steadily declined.

Since 1899 a great change has occurred. Not only have the numbers increased year by year until they have reached nearly 2,000 per annum, but London's proportion of the whole of the cases in Great Britain has increased from 60 per cent. to 77 per cent. The explanation of this increase is probably to be found in the discovery of mallein as a diagnostic agent. Formerly, the great difficulty experienced by horse-owners in dealing with glanders was that it was impossible to discover the disease until clinical symptoms appeared, a discovery frequently too late to prevent the infection of many other animals in the stud. Since the discovery of mallein a prudent horse-owner immediately causes those horses which have been in contact with the glandered animal to be injected with mallein. Where this is done with the knowledge of the veterinary inspector all is well, because the reacting horses are slaughtered, and the disease is eliminated from the stud without injury to other horse-owners, the Council paying, in London, the maximum compensation permitted by the Order, viz., one-fourth value. It is, however, to be feared that these cases are comparatively few in number, and that the more usual course is for horse-owners to dispose of re-

Return as to the prevalence of glanders in London and adjoining counties, as compared with the rest of Great Britain during the past 19 years.

Year.	London.	Middlesex.	Essex.	Kent.	Surrey.	Great Britain.	Percentage of London's proportion.
1885	786	43	15	11	12	946	83
1886	933	30	16	6	11	1114	83¾
1887	1282	50	12	10	11	1482	86
1888	1307	50	21	16	13	1581	82¾
1889	1952	66	23	15	12	2246	86
1890	1563	58	20	7	17	1808	86
1891	2174	81	22	10	24	2435	89
1892	2526	107	40	16	33	3001	84
1893	1619	89	35	21	40	2133	76
1894	982	60	36	16	12	1437	68
1895	1036	109	81	18	23	1594	65
1896	857	52	49	21	27	1294	66
1897	980	73	57	24	20	1629	60
1898	845	94	49	8	9	1385	61
1899	905	77	62	12	20	1472	61½
1900	1387	75	96	39	22	1858	74½
1901	1828	93	119	54	17	2370	77
1902	1604	58	85	36	39	2073	77
1903	1915	118	102	18	52	2499	76½
	25,781	1404	919	358	414	34,357	

acting animals as quickly as possible, and by this means the disease is spread.

In 1899 a Departmental Committee of the Board of Agriculture was appointed to inquire into and report upon the working of the Diseases of Animals Acts in so far as they relate to glanders. That committee received a great mass of evidense and issued a valuable report, with the recommendations of which the Council is in entire agreement. No effect having been given to these recommendations, the Coucil made frequent representations to the Board and attended before Mr. Hanbury in July, 1901, and recently before the Earl of Onslow, the present President of the Board.

The Council also attended before the Chancellor of the Exchequer to urge that if more drastic measures were taken for the suppression of glanders, involving the payment of increased compensation, some contribution towards the expenses should be paid out of Imperial funds, but to this proposal the Treasury intimated its inability to agree.

The more important points on which amendment of the law are needed are as follows—

(*a*) Compulsory notification of disease by veterinary surgeons.

(*b*) The recognition of a reaction to mallein as diagnostic of glanders.

(*c*) Power to deal with in-contact horses.

As a result of the Council's representations the Board of Agriculture has now under consideration the draft of an amending order.

During the year 51 infringements of the Order have been detected, and fines and penalties amounting to £73 17s. have been inflcted in 11 cases in which the Council instituted legal proceedings. In the remaining cases owing to the outward symptoms of disease being slight, the owners have only been cautioned.

MEAT INSPECTION IN GLASGOW.

The following is an abstract from the Report of the Veterinary Surgeon (Mr. A. M. Trotter, M.R.C.V.S.), to the Corporation of the City of Glasgow for 1903.

During the year 1903 there were slaughtered—

Abattoir.	Cattle.	Calves.	Sheep.	Pigs.	Goats.	Total.
Moore St.	39,704	1,549	204,271	42,517	23	288,064
Milton	4,723	512	33,329	6,446	—	45,010
Victoria	2,935	264	33,785	4,520	1	41,505
Yorkhill	39,638	2	11,938	—	—	51,578
	87,000	2,327	283,323	53,483	24	426,157

These figures, compared with those for 1902, show a decrease in the number of home animals slaughtered, with the exception of swine, and an increase in the number of foreign cattle landed at the Foreign Animals Wharf.

It has been asserted that, owing to the severe inspection of meat which obtains throughout the country, the industry of "cattle" rearing in this country is rapidly falling into decay. It might at first sight be thought that the above figures corroborate this assertion, but it must be remembered that the number of home animals slaughtered in Glasgow is largely regulated by the number of foreign animals landed at Yorkhill Foreign Animals Landing Wharf.

During the year 1902, 70,239 home cattle were slaughtered, as against 46,784 during the previous year—an increase of 23,455; while during the same year there were slaughtered 28,439 foreign cattle, as against 49,881 during 1901—a decrease of 21,442.

It will be noted that the number of cattle in 1903 is considerably above the average of the last 15 years. It is true that the numbers for 1902 were under this average, but this is accounted for by fewer foreign cattle being imported into this country; and as, in consequence, higher prices were given for meat, the stockowners, of this country were encouraged to put on the market every animal which could be used for food purposes.

It is interesting, in view of the repeated assertion that the wholesale destruction of tubercular carcases is the reason why there is a marked decline in the production of home meat, to note that sheep are the only animals showing a tendency to diminish in numbers—a class of animal in which tuberculosis is rarely met with.

The numbers of swine are naturally more subject to variation, but the numbers for 1903 are well above the average. The figures for 1903 show an increase of 386,994 over that for 1902, a clear indication that swine rearing and feeding in this country is still considered by stockowners to be worthy of their attention.

Since the Tables Nos. 2, 3, and 4 were compiled, the returns of the cattle, sheep, and swine in Great Britain, as at 4th June, 1904, have been published. These returns confirm my contention that the breeding and feeding of cattle and swine in this country is not, as alleged, a dying industry.

The figures for 1904 are as follows, and are compared with those for the previous year:—

	1904.	1903.		
Cattle,	6,860,350	6,704,618	...	Increase, 155,742
Sheep,	25,207,174	25,639,797	...	Decrease, 432,623
Swine,	2,861,644	2,686,561	...	Increase, 175,083

In considering the question of the meat supply, the great increase in the population of Scotland, England, and Wales must be taken into account.

The population ascertained at the census of—

			Increase.
1871 was 26,072,284	...	...	—
1881 was 29,710,012	...	...	3,637,728
1891 was 33,028,172	...	...	3,318,160
1901 was 36,999,946	...	...	3,971,774
			10,927,662

In other words, at 1901 there were 10,927,662 more people to feed than there were at 1871.

It has been estimated by the Committee of the Royal Statistical Society that the amount of meat consumed during 1902-3 per head of the population in the United Kingdom was 115·09 lbs. To ascertain, therefore, the increased amount of meat necessary to feed the increase of the population in 1901 over that of 1871, is simply a matter of calculation—

10,927,662 × 115·09 lbs. = 561,457 tons 8 cwt. 1 qr. 15 lbs.

Not only, however, is there an increase in the population, but, according to Turnbull (Transactions of the Highland and Agriculture Society, 1903, page 210), there is an increase in the amount of meat consumed per head of the population. The estimated annual quantity of meat consumed during the quinquennial period 1890-94 per head of the population was 107 lbs., during that for 1895-99 it was 116 2-5th. lbs., whilst during the biennial period 1900-01 it was 119¾ lbs.

There is no doubt that this country is largely dependent on other markets for supplies.

Great Britain can only produce a limited quantity of meat, and when the maximum quantity it is capable of producing is reached, then the surplus must be obtained from over the seas.

Another potent factor in regulating the production of home meat is the price realised for it.

The fol owing table has been compiled from prices ruling at the Central Meat Market, London, during 1903, to show approximately the difference in the market value of the different classes of meat:—

BEEF.

Scotch—Short Sides		6½d. per lb.
American—Hind Quarters—	Refrigerated,	5½d. „
Australian— do.	Frozen,	3½d. „
River Plate— do.	do.	4d. „
New Zealand— do.	do.	4d. „

MUTTON.

Scotch		7½d. per lb.
English		6¾d. „
Ewes		5½d. „
Dutch		5¼d. „
New Zealand—Frozen		4d. „
Australian— do		3½d. „
River Plate— do.		3½d. „

It will be noted that foreign and colonial meat is lower in price than home meat, and consequently butchers are induced to purchase, to the detriment of home breeders and feeders. It must be stated, however, that a considerable quantity of home meat is inferior to that which is imported from other countries.

Recently the objectionable practice has sprung up of consigning meat from abroad, either in small pieces or as minced meat, consequently consignments of this description cannot possibly be examined.

Much could be done, especially by Irish breeders, to improve the breed of cattle, and, by thus effecting improvement in their herds, they would not only improve the meat supply of the country, but their own financial position.

Following the precedent of former years, I herewith submit tables showing at a glance the prevalence of tuberculosis among (*a*) the animals reared in this country, and (*b*) the animals landed at the Foreign Animals Landing Wharf, and the measures taken with those carcases affected :—

(*a*) HOME ANIMALS.

Species.	Slaughtered.	Tubercular. Measures Adopted. Affected.		Carcases Partially Destroy'd		Carcases Totally Destroy'd		Carcases Passed	
	No.	No.	Per Cent	No.	Per C'nt	No.	Per Cent	No.	Per Cent
Cattle	47,362	7484	15·80	771	10·30	1096	14·64	5617	75·06
Calves	2,325	7	·30	...	...	4	57.14	3	42·86
Sheep	271,385	1	0003	...	...	1	100·00	...	...
Swine	53,483	2132	3·98	...	...	75	3·52	2054	96·48

(*b*) FOREIGN ANIMALS.

Species.	Slaughtered.	Tubercular. Measures Adopted. Affected.		Carcases Partially Destroy'd		Carcases Totally Destroy'd		Carcases Passed.	
	No.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.	No.	Per Cent.
Cattle	3,9638	442	1·11	11	2·49	3	·68	428	96.83
Calves	2	...	...	...	...	...	...	...	...
Sheep	11,938	...	...	...	...	...	...	...	...

A record of the seat of the tubercular lesions in each animal affected was kept, and are here tabulated :—

HOME ANIMALS.

	Pleural Cavity.	Peritoneal Cavity	Both Cavities.	Other Parts of the Body.	Total.
Cattle—					
Oxen,	474	77	275	297	1,123
Bulls,	512	54	222	180	968
Cows,	2,081	251	2,657	247	5,236
Heifers	61	6	66	24	157
	3,128	388	3,220	748	7,484
Calves	3	—	4	—	7
Sheep,	—	—	1	—	1
Goats,	—	—	—	—	—
Swine,	40	109	188	1,796	2,133
	3,171	497	3,413	2,544	9,625

These tables are of interest, as they demonstrate that tuberculosis is a preventable disease, and it merely requires stringent hygienic measures, if not to entirely eradicate it, at least to materially diminish its prevalence. If all those cases in which tubercular lesions were found in both cavities be discarded, it will be seen that 88·96 per cent. of affected cattle contracted the disease through the inhalation of tubercle bacilli. This fact cannot be too frequently brought under the notice of stockowners. It has been asserted that only "piners" are dangerous to their fellows, but my experience does not confirm this statement. I have been able, by microscopical examination, to demonstrate innumerable tubercle bacilli in the muco-purulent matter coughed up by an animal in good condition. This animal was, therefore, a "centre" for the dissemination of the seeds of the disease.

The examination (by microscope or by inoculation) of discharges from the lungs and vagina is an invaluable aid to the clinical diagnosis of tuberculosis.

It will be noted that tubercular disease is more frequently found, on post-mortem examination, to affect the older home animals, *e.g.*, cows. It ought not, however, to be inferred that aged animals are more liable to contract tuberculosis, but rather regarded as an indication that the conditions, under which our herds are housed, are favourable to the dissemination of the disease. This view receives confirmation in the statistics regarding the prevalence of tuberculosis among the cattle landed at the Foreign Animals Landing Wharf, York Hill. Of the 921 cows slaughtered during 1902, 32, or 3·47 per cent., were found, on post-mortem examination, to be tubercular, whilst during 1903, of 540 cows, only 3, or ·5 per cent., were found thus affected. The disparity in the percentage of tuberculosis affecting home and foreign cows is due solely to the difference of the treatment meted out to these animals. Too many of our herds—even our milch cows—are housed in ill-ventilated, badly-lit, and dirty byres. The result is the vitality of the animals is lowered, and a ground specially suitable for the growth of the seeds of tuberculosis is thus prepared. It is, unfortunately, not uncommon to find herds in this country with 50, 60, 70, or more per cent. of their members affected with tuberculosis, and yet the stockowners of this country, with few exceptions, are not taking those measures which have been demonstrated to be effectual to mitigate, if not to eradicate, this scourge.

MALIGNANT DISEASES.

In the Report for last year I briefly referred to the presence of malignant diseases among the animals slaughtered in our abattoirs. During the fiscal year under review 134 cases of malignant disease were discovered on post-mortem examination. Under the term "malignant diseases," I have included all forms of carcinomata and sarcomata.

The condition which is most frequently found is adeno carcinoma of the liver. From the 1st January to 31st December, 1903, 122 cases of this disease were detected. This condition is found most frequently in aged animals.

These cases were distributed in the different species as follows:—

Cattle,	...	...	119
Sheep,	...	...	3

Of the former, 116 were those of animals consigned from Ireland, whilst the remainder (3), if they had not been bred, had at least been fed for some time in Scotland.

Of the latter, only one could be traced, and it was ascertained to have been consigned to the Glasgow Market from West Perthshire.

As in man, so in the lower animals, cancer is more frequently an accompaniment of the later stages of life.

Many of the cattle imported from Ireland and slaughtered in Moore Street Abattoir are aged cows, and it is amongst this class of animal that this disease is more frequently found.

The probable reason why these animals are found, on post-mortem examination, to be more subject to cancer in its various forms is that they have been permitted to live to attain their almost allotted span of life.

This contention is supported by our experience in the case of pigs.

During the year 53,483 swine were slaughtered, the average age of which would be from six to twelve months. These animals are, therefore, slaughtered at an age-period probably equivalent to that of early manhood in the human subject, and have not yet acquired an age evidently specially prone to cancer.

Again, of the 271,385 home sheep and lambs slaughtered, only three were found affected with cancer, and here also the same remarks are applicable.

GLASGOW VETERINARY COLLEGE.

The introductory lecture of the winter session of this College was delivered in the College Buildings, Buccleuch Street, Glasgow, on Tuesday, Oct. 25. Professor Glaister, of the Glasgow University, was the speaker, his subject being "The Future of the Veterinary Profession." Sir James D. Marwick, LL.D., occupied the chair, and amongst the large number of gentlemen, besides students, who were present, were Principal M'Call, Prof. M'Call, Prof. Murphy, Prof. M'Alpine, Mr. Rutherford, F.R.C.V.S., Mr. Robb, F.R.C.V.S., Mr. Peter Fyfe, Rev. D. Watson, Dr. James M'I. M'Call, of the Board of Agriculture, and others.

The CHAIRMAN, in the course of his preliminary remarks referred to the official relationship which had existed between him and Principal M'Call in the administration of the various laws governing the health of the city during the past thirty years. Referring to the subject of the lecture, he had long been unable to understand why veterinary science should not be included in a comprehensive system of medical science, and so taught in their universities, and he trusted that some time in the near future would see a change in the working of the College, either by the transference of the work to Gilmore Hill, or a continuance of the work by the College, affiliated with the University. (Applause).

Prof. GLAISTER, in the course of his remarks, which were punctuated by the usual boisterous outbursts of the students, divided the students into three different sections:—(1) Those who were determined to do their utmost to acquire a thorough knowledge and training of veterinary science, and to equip themselves to the best of their ability for the profession. To such, difficulties would disappear as they were seriously faced, and what might seem a long time before reaching the coveted goal would rapidly pass. (2) Those who looked upon student life as a time for pleasure and enjoyment, with the acquiring of knowledge as a mere incident; (3) those who were initially unfit mentally for the career upon which they had set out. He hoped his hearers were mainly of the first class, and were likely to be a credit to themselves and teachers and college. He advised them to follow the old rule, "Whatsoever thy hand findeth to do, do it with all thy might." The way of the student was hard, and got harder the further he advanced in the paths of knowledge. Although, in the main, he agreed with a high standard of examination, he was not like some examiners, who expected in the student the full knowledge of their profession which could only come with years of study and practical work. It was not to be expected that students could learn in a three years' course of study the vast amount of knowledge that some examiners required of them. Examinations should be in strict accordance with the time and opportunity allowed the student for acquiring knowledge, and with due regard to the skill necessary for the student to skilfully and efficiently carry out his public duties. Coming to the changes which were now taking place in the standing of the veterinary profession, he held that these changes were all in the right direction. A still more forward movement was the alliance or affiliation of the colleges with the universities. So long as the power of granting diplomas qualifying students to practice remained with the Royal College of Veterinary Surgeons, he feared that an extra value would be attached to the hall mark which the University could place on the veterinary graduates. He referred to the establishment of the Veterinary College in Liverpool, and to the case nearer home of the Royal Dick Veterinary College Trustees and the Edinburgh University. The result of the negotiations in the latter case would be watched with keen interest. When commerce and music had been made the subjects of university degrees, they could hardly imagine any good reason for pharmacy, dentistry, and veterinary science being excluded. It seemed to him that before a Scottish college could seek affiliation with a Scottish university, it must have (1) a sufficient endowment; (2) an efficient equipment as a teaching institute; and (3) in other respects the proposal to affiliate must be satisfactory to the university court. The present financial state of the universities made such requirements necessary. The power of awarding the diploma being in the hands of the R.C.V.S. would necessitate two examinations, *i.e.*, a university examination and an R.C.V.S. examination. This would raise two objections (1) additional monetary outlay to students; and (2) duplicate examinations. It appeared to him that a scheme might be arrived at by moderate concessions on the part both of the R.C.V.S. and the universities. The Royal College could rest assured that the teaching and examinations of the university for the degree in veterinary science would not be less high, however much higher, than those which at present obtained for the diplomas. Referring to the large amount of good work which had been done by the veterinary profession through research into diseases communicable between animals and the human species, he advised the students, besides acquiring an all-round knowledge of the work of the profession, to closely study pathology, the disease of animals, and also the bacteriological methods of investigation. He concluded by pointing to New Zealand and America, where veterinary research was being encouraged by the government, and thought it would be well if the examples there given were followed by the home Government.

The CHAIRMAN hoped Prof. Glaister would see his way to allow Principal M'Call to have his address published in such form as to be available to all of them.

Mr. RUTHERFORD, in proposing a vote of thanks to the lecturer, took occasion to state his objection to affili-

ation with the university. To do so would lose the veterinary colleges their independence. The mere matter of a university degree would do nothing to help the veterinary profession. He would rather that the veterinary colleges be allowed to stand by themselves, aided by Government grants.

Prof. GLAISTER, in replying to the cordially awarded vote of thanks, pointed out that what he had suggested was a modification of their positions by both parties, university and R.C.V.S.

Principal M'Call read out the names of the successful students during the past session, and Mr. Robb proposed a vote of thanks to Sir James Marwick, for presiding, which, being heartily accorded, concluded the business of the meeting.—*The Scottish Farmer.*

YORKSHIRE VETERINARY SOCIETY.

The autumn meeting was held at the Hotel Metropole, Leeds, on Friday, October 28th, the President, Mr. S. Wharam, of Leeds, in the chair. There was a fairly large attendance of members including Messrs. Chambers Kirkheaton; J. Clarkson, hon. sec., Garforth; F. W. Clough, Morley; P. Deighton, Selby; A. Ellison, Harrogate; Frank Hallilay, Dewsbury; J. McKinna, Huddersfield; F. W. Pawlett, York; H. Pollard, Wakefield; Thomas Pratt, Ripon; M. Robinson, Barnsley; J. E. Scriven, hon. treas., Tadcaster; R. C. Thompson, Doncaster; G. Whitehead, Batley; Principal Williams, Liverpool; George Barber, P. T. Bolton, H. G. Bowes, W. Crawford, F. W. Greenhalgh, A. McCarmick, A. W. Mason, and Frank Somers, all of Leeds. The visitors present were Messrs. R. W. Clarke, Wragby; James Smith, Huntingdon; and Henry Sumner, Liverpool.

Letters of regret at inability to be present were announced from Col. Nunn, Messrs. Cockburn, Carter, Watson, and Prof. Pritchard.

Mr. HENRY SUMNER, of Liverpool, was nominated a member on the motion of Mr. McKinna.

THE SOCIETY'S MEMBERSHIP.

Mr. BOWES referred to the desirability of taking some practical steps to increase the membership and influence of the Society. They might add to their strength by circularising the Yorkshire members of the veterinary profession who had not yet joined them.

Mr. MASON said that there was a good attendance that afternoon, but that they had had meetings with not more than ten or twelve present. The Society was not so representative of the profession in Yorkshire as it ought to be. There were numerous practitioners in the country, but they never saw or heard anything of them, unless they got into trouble. He thought that some effort should be made to gather these "stray sheep" into the fold. He would leave it with the standing Council to do something on the lines suggested by Mr. Bowes.

The HON. SEC. explained that he had intended bringing the matter forward when reporting on the work of the Standing Council during the year. He quite agreed with the idea of popularising the Society. Many suggestions had been made as to how that might be done, and he thought that they might safely leave the matter in the hands of the Council.

The PRESIDENT pointed out that a bigger membership would mean a larger income and an increase in the usefulness of the Society.

Mr. CLOUGH moved, and Mr. McKinna seconded, that the question be left in the hands of the Council.

The resolution was unanimously agreed to.

ANNUAL BALANCE SHEET.

The HON. TREASURER presented his balance sheet, which had been audited by Mr. Mason and Mr. Greenhalgh. The receipts were:—Balance forward, £22 19s. 3d., and subscriptions £27 19s, making a total of £50 18s. 3d.

The expenditure was £22 19s. 5d., leaving a favourable balance of £27 18s. 10d.

The auditors and the Treasurer noted with regret that the subscriptions in arrear amounted to £41 9s. 6d. The annual dinner, explained Mr. Scriven, was so badly attended that the Society had to pay £6 to make up the guarantee that had been given. Since the balance sheet was printed he had received £4 4s. in subscriptions. He should like to see the Society have a credit balance of £50 at the bank. As to the subscriptions in arrear, eight members owed for four years, two for six years, and four for three.

Mr. MASON, while recognising that the arrears were very heavy, and regretting that members did not pay as they ought, did not like to exercise the rule which they had and strike the defaulters off the Society's list. Perhaps it would be as well to allow a little more latitude, and to leave the matter with the Council.

The PRESIDENT likewise hesitated about adopting drastic measures and striking names off the list. He did not see why all the members of the College in Yorkshire should not become members of the Society.

Mr. GREENHALGH said the amount of arrears was disheartening to the Treasurer and the auditors.

The SECRETARY, in reply to Mr. Bowes, said that rule 7 provided that a member who had not paid his subscription to the Society for four years should be struck off the roll.

Eventually the balance sheet was adopted, on the motion of Mr. Bowes, and seconded by Mr. Thompson.

THE WORK OF THE COUNCIL.

The SECRETARY mentioned that the Council thought it advisable that he should give a short *resumé* of their work during the year. The Council had been most energetic and had held eight meetings. Three members had attended the whole of the meetings, two had attended seven times, one six times, one five times, two thrice, one twice, and two once each. Suggestions for popularising the Society had been considered. It was felt that it was desirable that every practitioner in the county should join the Society. In that case they might have a better supply of instruments, a larger library, and obtain some of the new remedies. Consideration had been given to the question of subscription arrears. A letter had been sent to the Royal College of Veterinary Surgeons supporting them in their effort regarding exemption from service on juries. The case of Mr. Scriven had also been considered. Mr. Scriven would bear him out that the Council had been a great moral support to him. They helped to work up his case considerably. Another matter which had been dealt with was the election of members of the Council of the Royal College. Much time, too, had been spent by them in the revision of the rules of the Society. A paper received from the Hunter's Improvement Society had also been under consideration.

REVISION OF RULES.

The rules of the Society, as revised by the Council, were next discussed and adopted. The word "medical" in the title of the Society was dropped, and it will be known in future as "The Yorkshire Veterinary Society." Hitherto the quarterly meetings had been held on the last Friday in January, April, July, and October. This rigid rule has not always worked satisfactorily, and it is hoped that the elasticity introduced whereby the meetings can be arranged on convenient dates in the four months named will lead to fuller attendances of members.

The SECRETARY instanced that the last annual dinner, held according to the old rules revised in 1899,

clashed with a civic reception in Leeds. Occurrences of this sort will, it is hoped, be avoided in future.

An Interesting Case.

Mr. Chambers called attention to a most interesting case. It was that of a cow which had had three calves, and had been indisposed on two or three occasions. He was called to the animal on Thursday, and found the following symptoms present: Head down, slight enlargement of jugulars, great weakness, pulse 100, temp. 105, dung uncudded. He hazarded the opinion that it was heart affection, and probably some foreign substance. The post-mortem, which was subsequently conducted, revealed bacterial necrosis of liver. He exhibited the liver. The other organs were healthy.

Mr. Ellison: Have you had the liver under the microscope?

Mr. Chambers answered that he had not.

Mr. Ellison: Then how can you tell it is bacterial necrosis.

Mr. Chambers: That is my opinion. Principal Williams and Mr. Sumner want specimens of the liver, so that you may hear something from those gentlemen about it. I was quite "off" in the diagnosis that I made. When I saw the cow on Thursday I told the owner that if she was not killed she would die. The owner had her killed.

Mr. Hallilay: You thought it was tuberculosis or some foreign body?

Mr. Chambers: Yes.

The President thanked Mr. Chambers for the trouble that he had taken in bringing the case, which was very interesting, before the members.

Mr. Deighton exhibited a balling gun and twitch combined, an instrument which was described as being very useful.

Election of Officers.

The President proposed as his successor in the chair, Mr. Hallilay, who he had known for 20 years. Mr. Hallilay was the son of a greatly respected Leeds medical practitioner, and was a native of Leeds, though he had now practised for many years in Dewsbury. He had great pleasure in submitting the resolution as he felt sure that Mr. Hallilay would make a very good President.

Mr. Frank Somers seconded. He was perfectly certain that Mr. Hallilay would occupy the chair with dignity and with tact throughout the whole year of his office.

Mr. McKinna, in supporting endorsed the estimate of Mr. Hallilay's fitness for the Presidency, and said he hoped to see a greater interest taken in the Society by members of the profession.

The resolution was carried unanimously.

Mr. Hallilay, in accepting the office, thanked the members for the confidence which they had shown in him by their vote. He said he had great pleasure in taking the position, and could only hope that he would fulfil its duties in a satisfactory way. At any rate that would be his earnest endeavour. If he occupied the chair as well as it had been done during the past twelve months, he should be satisfied.

Vice-Presidents were appointed as follows: The retiring President (Mr. Wharam), Mr. McKinna, and Mr. Crawford.

The re-election of Mr. Scriven as Treasurer was proposed by Mr. Greenhalgh, seconded by Mr. Mason, and supported by Mr. Wharam. All the speakers bore testimony to the excellent work of Mr. Scriven, and expressed the hope that his desire to increase the balance in the bank to £50 would be satisfied.

Mr. Scriven said he would do his best to get the £50.

Mr. Mason then moved that Mr. Clarkson be again appointed Secretary. He said there were gentlemen in the room who had done splendid secretarial work for the Society, but they had never had a better secretary than Mr. Clarkson.

Mr. McKinna in seconding, remarked that Mr. Clarkson had done a great deal of work for the Society, while Mr. Somers, speaking in support of the resolution, said that, as a past secretary, he knew something of the work.

The resolution was carried with acclamation.

The Secretary replied: He humorously observed that for twelve months at any rate, they had saved him from the ranks of the unemployed. He felt that he had made mistakes ("No, no"), but that he would try in the next twelve months to do more in the interests of the Society.

On the motion of Mr. Bowes, seconded by the Secretary, Mr. Mason and Mr. Greenhalgh were re-appointed auditors.

The above officers, together with Messrs. Bowes, Clough, MacCarmick, Whitehead, Somers and G. E. Bowman will form the Council.

HYPODERMIC MEDICATION,

By R. W. Clarke, M.R.C.V.S., Wragby.

The introduction of a needle into the body as a therapeutic measure has been in vogue for centuries in eastern countries and was introduced into Great Britain in 1670. Although intravenous injections of drugs are reported in the 17th century the mode of their injection is uncertain and it was not until 1843 that we found morphia solutions were injected subcutaneously for the cure of neuralgia, which would seem to be practically the foundation of the present system of hypodermic medication. It was not however until 1867 when a commission was appointed by the Royal Medico-Chirurgical Society of Great Britain that this method became general. One of the earliest records of the introduction of drugs beneath the skin (apart of course from setoning and rowelling) in veterinary surgery was reported in *The Veterinarian* Sept. 1855, when some experiments instituted at the Royal Veterinary College by the late Professor Coleman were performed with hydrocyanic acid in which three drachms poured on a piece of sponge were inserted beneath the skin of a horse in order to determine the quantity required to cause death; it was not until the discovery of the alkaloids, which enabled us to administer a sufficiently active dose in the necessary small bulk, that this method of administering drugs was resorted to to any extent.

The chief advantages of hypodermic injections are:—The rapidity and certainty of action, the facility of administration, the portability of the required ingredients, and in the case of certain agents economy should be considered an advantage. The certainty of action is one of its chief advantages over the "Oral" method, as absorption from the stomach and bowels is often almost arrested in certain conditions; and not only so but when medicine enters the stomach it mixes with the contents and is only gradually absorbed, especially if the stomach is full. I have received practical demonstration of this more than once in making P.M. examinations of cases of impaction by finding a physic ball which had been administered two or three days previously, among the contents of the stomach in almost the same condition as when given.

Having regard to the minute doses required, it is essential that drugs should be absolutely pure; they should be obtained from reliable sources, and where practicable the tabloid form should be used, as they are not so liable to undergo changes as drugs in solution, several of those which are used hypodermically being very unstable; where solutions are indispensible they should as nearly as possible be neutral in action, for if markedly alkaline or acid in reaction they are obviously

irritant to the tissues, acid solutions as a rule being more or less painful. Aq. Camph., Aq. Chloroformi form the best vehicles where practicable; equal parts of glycerine and water, alcohol, ether or distilled water are also used. Care should be taken that the drugs are in solution, not in suspension, for if so they will be deposited where injected and absorption into the circulation will be retarded and in certain instances no benefit would result. The physiological action of nearly all drugs is from three to five times greater when administered hypodermically than when given by the mouth; the doses should therefore be calculated accordingly. It is almost superfluous to add that the syringe should be kept perfectly clean and as aseptic as possible, more especially where repeated injections are made in cases of a septic nature, otherwise troublesome abscesses are likely to occur at the seat of injection. The simplest method of asepticising the needle of the syringe is to hold it in the flame of a spirit lamp, a simple lamp being made by using an ordinary thermometer case with a lamp wick to fit, which can thus be carried in the pocket. The needles when not in use should be kept in a phial of alcohol, a fine wire, or better still a pig's bristle, inserted in the needle to prevent rusting. If a wire has rusted in a needle it should be dipped in oil, then heated, and to remove rust from the interior oil should be passed through, heated again, then rinsing with alcohol. When injecting subcutaneously the position (avoiding, of course, harness contact) is to a certain extent immaterial, as the agent is absorbed into the circulation as well in one position as another. In cattle the thickness of the skin will have to be taken into consideration, as it will be found almost impossible to insert a needle through the skin of, say a polled angus cow, excepting near the root of the tail or close to the elbow.

The methods of administering hypodermic injections vary according to circumstances. Where the air passages are chiefly affected intra-tracheal injection is resorted to; where instant action is required, as in collapse, etc., intravenous injection, provided the agent is one which can safely be so administered; in the diagnosis of lameness, and where using certain agents which cause irritation, the deep or parenchymatous method. But the subcutaneous method answers best in by far the greater number of cases. By this means the agent is absorbed into the circulation and action commences in 2½ to 3 minutes, which may easily be verified after the injection of atropin, dilation of the pupil commencing in that time, also in the subcutaneous injection of prussic acid spasmodic breathing commencing 2½ minutes after injection. Care should be taken when injecting subcutaneously not to introduce the needle into a vein as serious results have followed the injection of certain solutions, especially serums, into the circulation direct.

Atropine.—Hypodermic injections of atropine act as a stimulant to the respiratory centre, abate secretion, combat spasm of involuntary muscles, and mainly by paralysing the third nerve cause dilation of the pupil. In excessive doses it causes first stimulation of the nervous system, followed by paralysis, delirium, coma, and death from asphyxia. The injection of ½ grain doses of the sulphate of atropine have been useful in the treatment of the laryngeal form of influenza when secretion is excessive. In spasmodic colic, in conjunction with morphine, atropine counteracting the depression caused by morphine also increasing its anodyne tendency. In the treatment of tetanus hypodermic injection of ½ grain doses every eight hours for 48 hours, and every twelve hours following for five to seven days resulted in complete recovery in two cases where no other treatment was resorted to than the early administration of a physic ball. It is also used as an antidote to poisoning by opium, eserine, and ptomaines. The B.P. liq. atropinæ sulphatis contains four grains to the ounce, and is prepared with aq. camph. The antidotes to poisoning by atropine are alcohol and ammonia.

Caffeine.—Has been advocated in the treatment of cerebral affections, chiefly "milk fever," the physiological effects being increased activity of the brain, also increased force of circulation and vascular tension. Poisonous doses induce general paralysis, arrest of the heart in diastole and death. It is in the later stages of the treatment of "milk fever" that we derive most benefit from its administration, when 12 hours or so after the injection of the udder the patient is still comatose, the injection of 20 grains, repeated in three hours if necessary, will often have the effect of restoring consciousness. The solution of the salts of caffeine are very unstable, they should therefore be as fresh as possible. The following combination of the salts is soluble in boiling water, 1 in 2, the salts remaining in solution after cooling—

Caffeine	20 grs.
Salicylate of Soda	17½ grs.
Distilled water to	1 drachm.

Caffeine in action is antagonistic to morphine and may be used as an antidote to morphine poisoning.

Cannabis Indica.—Is a powerful nervous excitant producing in the human subject great activity of the intellectual faculties, mirthful and sometimes furious delirium, and a sense of physical and moral well being. My reason for mentioning this is that it is one of the drugs said to have been used in the so-called "doping" of racehorses, and if it has the same effects on the horse as on the human subject one can easily understand the temporary benefit derived from it. It is a well known fact that in India it is not only taken by the natives but also given to their horses on a journey to increase their staying powers.

The injection of Indian hemp in veterinary surgery is used in allaying intestinal pain and it possesses the advantage over morphia that it does not arrest peristalsis. Equal parts of Tr. cannabis Indica and water are injected in doses of 90 to 120 minims of the mixture, which should be injected deeply, owing to the tendency for an abscess to form at the seat of injection if immediately beneath the skin.

Cocaine causes local anæsthesia, dilation of the pupil by paralysing the filaments of the sensory nerves, elevation of temperature, increase in pulse volume, and a general increase in vital energy. Excessive doses cause decrease in temperature, great nervous excitement, incoordinate movements, and eventually convulsions and death from paralysis of respiration. Hypodermic injections of cocaine hydrochloride cause local anæsthesia in from five to ten minutes lasting from half to one hour, the action being more effective if the solution is injected at the temperature of the body, and as the solution is very unstable it is better freshly made. It is readily soluble in water and if required to be kept a trace of boric acid should be added. The quantity used depends to a certain extent on the area required to be rendered insensitive. The Doctor Sahib, writing in *The Veterinary Record*, April, 1903, found 1½ grains insufficient and 3 grains effective. Five grains of a 10 per cent. solution will be found sufficient for almost all operations. Mr. Rutherford of Edinburgh advocated the use of half an ounce of a 20 per cent. solution, which would contain 43 to 68 grains, in order to produce anæsthesia for firing a horse, but as 60 grains injected produced toxic symptoms it cannot be safe to inject such an amount. The combination of morphia and cocaine is said to produce local anæsthesia lasting from one to twelve days, and thereby in certain cases to establish a curative effect. The solution is made according to this formula—

Cocaine hydrochloride	0·15 grammes	= 2¼ gr.	about.
Morph. hydrochlor.	0·10 „	= 1½ gr.	„
Aq. dist.	5 „	= 85 ℥.	„

Eserine has proved itself a most useful remedy in stoppage of the bowels, and has undoubtedly saved the lives of several animals even under my own observation; it acts in medicinal doses by increasing peristalsis, by direct stimulation of the involuntary muscular fibres in the coats of the stomach and intestines chiefly, also of the œsophagus. Excessive doses cause paralysis of the diaphragm and death from asphyxia. Two grains of the sulphate of eserine injected subcutaneously will cause a copious evacuation of the contents of the bowels in from 20 to 30 minutes or even less; if not the injection may be repeated in 12 hours. It is contra-indicated in enteritis and in twist, aggravating the symptoms considerably, the increased pain lasting generally from one to two hours. It should be used in tabloid form, as the solution on exposure to air and light assumes a violet colour changing to red and quickly losing its activity. Five grains of sulphate of eserine dissolves in 112 minims of acidulated water; where tabloids are used they will be found much more soluble in warm water than in cold, 2 grains readily dissolving in 60 minims water at 98° F.

Vet.-Lieutenant Williams spoke highly of its use in gastro-intestinal tympany as well as in impaction, during the South African Campaign. Some writers advocate the intratracheal method of injection, but when we consider the action of eserine on the diaphragm, and are aware that the injection of five grains caused toxic effects and that two grains injected two hours later caused death we naturally ask, Is it worth the risk when its action subcutaneously injected is so reliable? In cases of choking where the obstruction cannot be removed by the probang, or where, as in the horse, it is sometimes most difficult to pass it, I have found that the injection of two grains sulphate of eserine caused relief in a comparatively short time.

Drugs bearing an antagonistic effect to eserine are atropine and strychnine. The best antidotes are chloral and ether.

Ether injected in small doses acts as a stimulant, causing rise of temperature, increased arterial tension, pulmonary combustion, and all secretions except urinary, general excitement and dilation of the pupil. Two drachms may be injected at intervals of an hour or less if required in cases of collapse, narcotic poisoning, as an antispasmodic in colic, and in the early stages of fevers, being effective in counteracting chills and shivering fits. Anæsthesia by the injection of ether hypodermically is only produced by a much larger dose than is required for inhalation, and in this respect it is an exception to the general rule. It is said that it requires 1½ to three ounces to produce anæsthesia in a dog. As ether dissolves the cement with which the joints of hypodermic syringes are secured it is advisable to inject as quickly as possible and to rinse the syringe with spirit immediately afterwards.

Ergotine is seldom required in veterinary practice but may be used in cases of uterine inertia during labour, and when injected the deep or parenchymatous method should be adopted, as an abscess is liable to form at the seat of injection if used subcutaneously; combined with chloral however this irritation is combated.

Ergotine	15 grains.
Chloral	2½ „
Water	1 drachm, may be injected.

Hydrocyanic Acid as an agent for destroying life has been commonly used in connection with dogs and cats, but its effects on the horse do not seem to have been so reliable. In the experiments previously referred to the late Prof. Coleman had great difficulty in destroying a horse with HCN. We are occasionally asked to destroy a favourite horse and the inevitable shot gun is objected to. In these cases it has been my habit to use prussic acid, and I have had no difficulty. Two drachms of HCN. injected into the trachea of a Shire horse suffering from paralysis caused death in ten seconds. Two drachms injected into the neck (subcutaneously) of a thoroughbred foal which had broken its back, had no apparent effect for 2½ minutes; then the paroxysms commenced suddenly, and death ensued in 15 seconds. As the first effect of prussic acid is to paralyse all nerve structures death, after the first sudden onset, is comparatively painless, the cornea being insensible to pain after the first spasm even during the few seconds before life is actually extinct. The humanity of this method of destroying life is evident, and if it had been adopted during the recent Army manœuvres the disaster to the cavalry horses would not have occurred. An antidote to poisoning by HCN. is seldom needed. Alcohol and ether are recommended.

Iodine.—The prescription of iodine and its preparations has advanced by leaps and bounds during late years, and as a germicide which may with safety and benefit be hypodermically injected it stands out by itself. The action of iodine is more of a local than constitutional character, and in affections of the respiratory organs due to the introduction of germs the intratracheal injection of preparations of iodine have had excellent results. In attacks of strangles and influenza I have had the best results from its injection, especially where the injections were commenced early in the attack, and I claim to have nipped in the bud more than one outbreak of influenza by this means, assisted by stringent isolation and other precautions as to disinfection of surroundings. In purpura also we have record of similar good results, and judging from the results of the cases reported in *The Veterinary Record*, August 6th last, by Mr. Scott, it appears to have the same beneficial result in connection with tetanus, in which case although the injections were made into the trachea the effect must be considered to be general, as the tetanus bacilli would pervade the whole system. The question naturally arises as to the preference of the intratracheal method over the subcutaneous, as the former when repeated for several days must, we should think, have an injurious effect on the living membrane of the trachea and bronchi.

Iodine when administered by the mouth is considerably wasted, as it unites to a great extent with the starch contained in the food in the stomach and forms the insoluble starch iodide which not being absorbed into the circulation is useless, the hypodermic prescription of iodine should then be resorted to whenever practiceble. The preparation which I have been in the habit of using is—

Iodine	5 grains	
Pot. Iodid.	10 „	
Water S. V. R.		*aa* 2 drachms

forming one injection.

Morphine. A certain amount of diversity of opinion exists as to the action of morphine, symptoms quite opposite to those exhibited by the human subject have been observed, especially when large doses have been administered. Excitement, dilation of the pupil, acceleration of the pulse, increase in temperature, tongue moist—all symptoms contrary to those shown by the human subject, on the strength of which certain writers argue that the action of morphine in the relief of pain is doubtful, and that when administered with atropin it is the latter which has the beneficial effect. As morphine acts by lessening reflex activity and paralysing both striped and unstriped muscles it must act as a decided antispasmodic.

Atropin is generally prescribed with morphine in order to combat the depressing effects of morphine when administered alone; an increased dose of morphine can be given when accompanied by atropin; if, however, the symptoms previously described are attributable to morphine it is not necessary to add atropin. Personally

I consider injections of 2 grs. morphine act as a decided anodyne, and I have used it both alone and with $\frac{1}{20}$gr. atropin and have failed to detect any appreciable difference, except with regard to the dilation of the pupil. Dr. G. A. Stockwell, M.D., says "The combination has long been extolled, but is alike unchemical, unphysiological, and unpharmaceutical; the effects claimed are indefinite, and one drug asserts itself to the detriment of the other, the effects for the most part being those of atropine." There are three preparations of morphine in use the hydrochlorate, acetate, and sulphate. The hydrochlorate is soluble in water, 1 in 24 at 50°F, 1 in 1 at 212°F; contains a greater amount of the morphia alkaloid than the acetate, and is the most desirable for hypodermic injection. The acetate is soluble in water 1 in 2½ at 50°F., contains 80 per cent. of the morphia alkaloid. The sulphate contains 76 per cent of the alkaloid and is less soluble than either the acetate or hydrochlorate. A useful solution of morphia for hypodermic use is made as follows:

	Morphine hydrochlor.	12 grs.
	Chloral	15 grs.
	Camphor water	480 minims
or	Morphine hydrochlor.	1 gr.
	Chloroform water	40 minims

80 minims of either solution representing 2 grs. morphine.

Antidotes to poisoning by morphia are caffeine or cocaine, or two drachms of the following solution may be injected

Essence of aniseed	10 parts
Alcohol	40 parts
Solution of ammonia	50 parts.

which makes a useful injection in all cases where stimulant is required.

Strychnine. Experiments by Lauder Brunton show that strychnine acts by stimulating the motor ganglia of the heart, it also stimulates the vaso-motor and respiratory centres, it therefore in this respect differs from alcohol, ether, ammonia, and digitalis, which are to a large extent muscle stimulants, hence it succeeds in some cases where other stimulants have failed; it is more readily absorbed when injected than when administered orally, and in cases of narcotic poisoning or of collapse, or of enfeebled circulation during affections of the respiratory and circulatory systems, this method of administration is to be preferred. Where the urgency of the case demands it this is one of the few cases in which the intravenous method may be resorted to. The tabloid form is recommended owing to the better regulation of the dose, ½ gr. of sulphate of strychnine in 50 minims of a mixture of equal parts of S.V.R. and water, increasing if necessary to 1 grain, which is the maximum dose which should be given hypodermically. Sulphate of strychnine is also soluble in glycerine 22-50 in 100.

Antagonistic to strychnine in action are eserine, curarine, cocaine, and chloral, the latter of which is especially recommended as an antidote, but owing to its irritant nature cannot be administered hypodermically *per se*. Another use, or abuse, to which strychnine is said to have been put hypodermically is in the so-called "doping" of racehorses.

Water. In the human subject hypodermic injections of water have often proved of great service, and although I have not heard that it has been used in the treatment of animals it is more than probable that similar results would follow, and in my opinion it is worth bearing in mind, for should we have no other remedy at hand save the hypodermic syringe, it would be worth while to know that in the human subject the hypodermic injection of distilled water, or of a simple saline solution (3 grs. to the ounce), has been used with good effect in neuralgia, colic, cholera, sciatica, vomiting and other painful affections, the theory being that it has a centrifugal action on the nerve centres. Hypodermic injections of iced water have also been beneficial in hyperpyrexia, and a marked diminution of albumen has been observed after the injection of sea-water.

Adrenaline is a micro-crystalline substance obtained from an aqueous extract of the supra-renal gland, and is said to be the most powerful vaso-constrictor known. It is prepared by Messrs. Parke, Davis & Co., 111 Queen Victoria Street, London, and Dr. Zehl, a German veterinary surgeon, attributes to it several most useful properties. He has used it with good effect in hæmaturia, uræmia, also as a local anæsthetic in conjunctivitis, as a diagnostic agent in the detection of lameness, and in laminitis. Mr. A. E. Bayley, writing in *The Veterinary Record*, Feb., 1903, used it with good effect as a local æsthetic in median neurectomy. Upon reading Dr. Zehl's article I obtained a bottle of the solution 1 in 1000 from Messrs. Parke, Davis, and although they do not recommend it for hypodermic use, as it is said to cause gangrene and local sloughing, I have used it in the diagnosis of lameness with no bad results. I injected 80 minims of a 1 in 10,000 solution over the shoulder joint of a horse which I suspected of being lame in the shoulder, while the owner was convinced it was lame in the knee; the horse trotted out sound 20 minutes after the injection and again two hours afterwards, and was lame again the following day; the action according to Dr. Zehl continues from four to six hours.

Gentlemen, this brings me to the conclusion of my paper, and I hope that by bringing these notes before you I may have been the means of instituting a discussion from which we shall all derive a considerable benefit, if so I shall consider that I am amply repaid for my trouble. I have given in each instance the dose for the horse, excepting where otherwise mentioned, and have chosen the chief agents in use hypodermically, there are, I know, others which I have not mentioned, but I am afraid I have already tried your patience, and I thank you for your kind attention (Applause).

Discussion.

Mr. Bowes said they had been very much instructed by the valuable paper to which they had listened, and they thanked Mr. Clarke for it. He (Mr. Bowes) was convinced that the hypodermic administration of medicine was not made so much use of by them as it might be. It was a handy way of carrying medicine about with them. There was one thing about which he was, perhaps, particular, and that was the size of the hypodermic syringe. He never used a big one; the ordinary human hypodermic syringe sufficed. In that they could dissolve any ordinary tabloid. A small case the size of a cigarette case would carry a syringe, two needles, and half-a-dozen tubes. As regarded the use of eserine he had great faith in it. He used it intravenously in two-thirds of a grain dose. He knew that many people were afraid to use eserine. In certain cases it was risky, but if they avoided giving it to old horses in large doses they would be safe. The injection of veratrine had been mentioned. A few months ago he read an article by Mr. Grell, who stated that he used it for the treatment of laminitis. According to the article a dose consisting of 10 cubic centigrammes of pure veratrine in 10 grammes of water, alcohol or ether, injected into the side of the neck, caused local perspiration, muscular twitchings, salivation, and the diminution of the pulse of the plantar artery. Four doses given daily was stated to be successful without any other treatment. Mr. Bowes added that this was a treatment which he had not tried. It would no doubt be interesting to try. He was interested to hear Mr. Clarke say that it was possible to kill a horse with two drachms of prussic acid injected into the trachea.

The Secretary said that he and Mr. Bowes were agreed as to the size of the syringe. He once had a 15ft. syringe, and noticed no difference regarding the dissolving of the tabloids between the size of the larger ranges.

Morphia was one of the drugs which seemed to have had rather a bad time of it lately, but he had never met a drug which could supersede morphia in its proper place. He had not the same faith in eserine that Mr. Bowes had. He had used caffeine in the later stages of milk fever with great success. He had frequently used ergotine in the retention of the fœtal membranes and in larger doses in hæmorrhage. In a country practice one did not get many cases of tetanus, but by the use of iodine and potassium iodide intravenously he had had a record of nine recoveries. Recently he took a tumour which weighed 7½ ounces off the back of a dog. He used cocaine and adrenaline, and he had no occasion to ligature a single vessel. He thought there was a great future for adrenaline.

Principal WILLIAMS said he had listened with very great interest to the paper and the speeches made in connection with the subject. About a year ago Mr. Clarkson told him that he had become a strong advocate of iodine in tetanus. He adopted the use of it in the next case that he had, and he could say with confidence that he cured the case. He strongly advocated adrenalin, particularly in minor operations. It was a remarkable drug in cases of hæmorrhage. He supported Mr. Clarkson in his favourable impression of the value of morphia. If not given in strong doses it was one of the best sedatives that they possessed.

Mr. WHARAM observed that morphia had never failed him yet. Cases, of course, differed, but he thought the action of morphia in allaying pain could not be excelled. He had used eserine with very good results, but he had greater faith in morphia, and other drugs more generally employed. Mr. Clarke had mentioned the value of iodine and potassium iodide in tetanus. He could not speak with certainty of this treatment. He had tried it, but the case had gone too far when he injected the drug. He had not used adrenalin, but he was told that it was an exceedingly useful drug in all cases where they were likely to get hæmorrhage.

Mr. FRANK SOMERS said that morphia was a sheet anchor in counteracting pain.

Mr. MCKINNA had frequently used cocaine for minor operations. He used an ordinary human syringe, and had experienced no unforseen results.

Mr. HALLILAY said that he had successfully used iodine in schirrhous cord, but not in tetanus. With regard to hydrocyanic acid he thought a great deal depended upon how long it had been kept. If the drug was fresh it was very useful in destroying life. He had not used adrenalin.

Mr. CLARKE, replying to the discussion, remarked that in regard to the size of the syringe they must be guided by the solubility of the tabloids to be used. The best plan was to carry two syringes—one for tabloids, and the other for solutions.

On the motion of the Secretary, and seconded by Mr. McCarmick, a hearty vote of thanks was accorded to Mr. Clarke for his capital paper.

Mr. MCKINNA invited the meeting to pass a cordial a cordial vote of thanks to Mr. Wharam for his excellent services as President during the past year.

Mr. BOWES seconded, and Mr. Somers and Mr. Clarkson supported the resolution, which was warmly carried.

Mr. WHARAM, in reply, said it had afforded him great pleasure to occupy the presidency. He acknowledged the hearty support which he had received from the officials, the Council, and the members of the Society.

At the conclusion of the meeting those present were entertained to tea at the Hotel Metropole on the invitation of the Leeds members of the Society.

Personal.

STROUD.—On the 31st Oct., at Grove House, Southall, the wife of E. Lionel Stroud, F.R.C.V.S., of a son.

DISEASES OF ANIMALS ACTS 1894 TO 1903. SUMMARY OF RETURNS.

Period.		Anthrax.		Foot-and-Mouth Disease.		Glanders (including Farcy)		Rabies. Cases Confirmed.		Swine Fever.	
		Out-breaks	Animals.	Out-breaks	Animals.	Out-breaks	Animals.	Dogs.	Other	Out-breaks.	Slaughtered *
GT. BRITAIN. Week ended Oct. 29, 1904		19	24	..	..	31	48	..	..	6	7
Corresponding week in	1903 ..	5	5	..		27	43	..	..	19	154
	1902 ..	13	17	..	..	24	41	..	..	45	250
	1901 ..	8	29	..		24	43	..	..	23	119
Total for 44 weeks, 1904		854	1305	..	..	1333	2326	..	..	1085	5035
Corresponding period in	1903 ..	631	947	..	..	1268	2165	..	..	1270	6662
	1902 ..	566	892	1	120	994	1787	12	11	1446	6899
	1901 ..	520	756	12	669	1177	2037	1	1	2921	14183
Board of Agriculture and Fisheries, Nov. 1st, 1904.											
IRELAND. Week ending Oct. 22, 1904		..	..	..	..	..	..	..	..	1	38
Corresponding Week in	1903 ..	..	..	..	..	..	..	..	..	2	174
	1902 ..	..	..	..	..	..	..	..	..	1	41
	1901 ..	..	..	..	..	..	..	..	..	2	68
Total for 43 Weeks, 1904		3	3	..	..	10	31	..	..	180	3980
Corresponding period in	1903 ..	3	10	..	..	3	4	2	..	155	3524
	1902 ..	..	..	..	..	8	39	..	..	152	3039
	1901 ..	1	2	..	..	4	4	1	1	209	3735

Epizootic Lymphangitis, Week ending Aug. 6. 1 case.

Department of Agriculture and Technical Instruction for Ireland, (Castle Street), Dublin, Oct. 27th, 1904.

NOTE.—The figures for the Current Year are approximate only.

* As Diseased or Exposed to Infection.

"A WELL KNOWN VETERINARY SURGEON."

[Mr. Leeney asks us to publish the following reply to a note in *The Veterinary News*. A copy of this reply has been sent to the Editor but has not yet appeared in that paper.]

To the Editor of *The Veterinary News*.

Sir,

You have my sincere sympathy in your embarassment. To have to publish a paper calling itself "News"—veterinary news—and be compelled to fill up space with a newspaper cutting more than two years old, is the nearest approach to literary bankruptcy that has come under my notice. The object of it may be very noble, intended possibly as a purifying fire to purge wilful advertisers: or very contemptible and foolish, as likely to estrange some of the very few subscribers to your bantling.

So far as I am personally concerned, I thank you for notifying my whereabouts to some of the good fellows I met in the Army in South Africa. I am sorry I cannot claim to have originated the excellent (but very stale) advertisement which some unknown but valued friend afforded me when restarting practice. All I could do was to have reprints of it for judicious circulation (one of which I enclose) as a model of oblique advertisement, which has the recommendation of being efficient without being costly, and worthy of notice by your brother blacksmiths on the Registration Committee.

I cannot of course measure the exact results of a newspaper puff (not even those of *The Veterinary News*), but I am in the happy position of having the most select practice in the district, and from time to time send clients to other practitioners, I do not claim any virtue for giving away what I don't want, but being able to maintain a scale of fees from 30 per cent. to 50 per cent. more than any other practitioner in the town, I recommend bargainers to go to some of the cheap men, who probably know their own value.

I enclose you a printed list of fees which you may publish for the benefit of those persons who canvass like greengrocers; asking for "shoeing and doctoring" at charges (I won't say fees) quite unworthy of professional men, yet most injurious to honest craftsmen trying to live by manual labour.—Yours faithfully,

HAROLD LEENEY, M.R.C.V.S.

FEES AND CHARGES.

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Treatment in Hospital from 10/6 per week
Boarders from 6d. per Day.
(Each Animal has a Separate House and Run).

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Cats, Male 5/-, Female, 10/6. Dogs, Male 10/6, Female 21/-
Operations for Removal of Tumours, and Extraction of Teeth, &c. from 5/- to 2gs.

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Small Animals 5/-
(Including subsequent Burial).

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From 9 to 11 a.m., and from 4 to 6 p.m.

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MILK FEVER.

Sir,

Dr. Haddon's note on milk fever, like his previous one on splints, certainly entitles him to be regarded as an intruder in these columns, and it is to be hoped he has a more intimate knowledge of his own profession. An M.D. who supposes that splints originate from blood tumours is hardly the person to give advice to the veterinary profession regarding the treatment of milk fever, especially if his knowledge is deduced from an experience of two cases (at the expense of his neighbour the V.S.)

I have no doubt the doctor, with his uncontracted uterus theory, thought he had made an important discovery and now considers himself a pioneer in veterinary science, an idea which will be rudely dispelled when he makes himself more conversant with comparative pathology. Without disputing the Dr's. hypothesis of auto-intoxication, which he seems to confuse with septicæmia, I should like to point out to him that many a cow has recovered from milk fever long before the uterus has had time to contract, while it is a common occurrence for the decomposing fœtal membranes to be retained for three or four days or longer without any apparent ill effect. It is also recognised among practitioners that an animal who has had a rough time in calving, where lacerations and abrasions have taken place in the uterine mucous membranes, seldom becomes afflicted with milk fever. Again, why don't heifers with their first or second calves suffer from this auto-intoxication. It would also be interesting for him to know that the present injection system of treatment is highly satisfactory, and the assertion that the milk has "certainly" nothing to do with the disease is a bold and dogmatic one, especially when unsubstantiated by pathological knowlege or clinical experience. Dr. Haddon ought to procure an up-to-date pathology text-book and get into touch with his subject, then we shall be glad to learn what he has got to say, and welcome mutual assistance. There is one redeeming feature about the doctor, that is, he is beginning to reason "comparatively" when he admits that the physiological act of parturition is pretty much the same in a cow as in a countess, but he ought also to have logically concluded that the pathological progress of a bony exostosis is also pretty much the same, whether situated on a quadruped's leg or a biped's toe.—Yours etc.,

JAS. FORBES, M.R.C.V.S.

24th October.

DISTEMPER VACCINE COMMITTEE.

Sir,

It may clear up some slight misapprehension if I say that as one of the Committee recently testing the vaccine for the prevention of distemper, I am quite in accord with the finding of the Committee as set forth in last week's *Record*. My reason for troubling you to insert this letter is that I have had a good many enquiries from brother practitioners as to my views on the subject; the reason why my name does not appear at the foot of the report is that I was not present at the meeting when it was formally adopted.

HENRY J. R. POPE.

THE PRELIMINARY EXAMINATIONS.

Sir,

It will I am sure give great satisfaction, perhaps more especially to the younger members of the profession, to know that we have at last a prospect of a preliminary examination, which will place a veterinary student on the same basis as a medical student from an educational point of view. I cannot understand why the Scotch Colleges refused to hold the examination as set by the College of Preceptors. My opinion is that this examination is of a higher standard than that set by the Institute of Scotland. I have come to this conclusion not only by comparing the various sets of papers set by these respective bodies but also by a knowledge of several students who presented themselves. There are apparently only a few students who fail to pass the examination as now set by the Institute of Scotland. I was acquainted with two gentlemen who several times presented themselves for the College of Preceptors and had been dismal failures, judging by the marks obtained. They, however, both passed the Institute of Scotland at their first sitting. Would it not be interesting to compare statistics of these respective bodies? It was suggested at the last Council meeting that the R.C.V.S. should have an examination entirely for intending veterinary students; surely this would not tend to raise the profession to that extent as when veterinary students were sitting for the same examination as intending medical students. Apart from that it would be a greater expense, and if students were scarce there would probably be the risk of the examination being lowered.

PELICAN.